

Amendments to the Claims:

The following listing of claims replaces all other prior listings of claims.

1. (previously presented) A flow control insert for a downhole string including a shoe, the flow control insert being formed separately from the downhole string and being adapted to be inserted within the downhole string above the shoe;

wherein the flow control insert is adapted to decelerate the flow of fluid through the downhole string;

wherein the flow control insert comprises a passage which includes at least one spiral portion which spirals in a first spiral direction and at least one further portion which spirals in a second spiral direction opposite to the first spiral direction; and

wherein a cavity is provided between the two spiral portions.

2. (cancelled)

3. (previously presented) A flow control insert as claimed in claim 1, wherein the passage is defined by at least one body member having formations thereon.

4. (previously presented) An assembly comprising a flow control insert as claimed in claim 3, and a shoe adapted for engagement with the at least one body member.

5. (previously presented) An assembly as claimed in claim 4, including an anti-rotation means to prevent relative rotation of the at least one body member and the shoe.

6. (previously presented) An assembly as claimed in claim 5, wherein the anti-rotation means includes a device shaped to engage a bore provided in the shoe.

7. (previously presented) An assembly as claimed in claim 5, wherein the anti-rotation means comprises a tapered edge provided on one of the device and the shoe and a correspondingly shaped groove provided on the other of the device and the shoe.

8. (previously presented) An assembly as claimed in claim 6, including an axial locking means to prevent axial separation of the device and the shoe.

9. (previously presented) An assembly as claimed in claim 8, wherein the axial locking means comprises a latch provided on one of the device and the shoe, and a groove provided on the other of the device and the shoe.

10. (previously presented) An assembly as claimed in claim 6, also including an axial locking means to prevent axial separation of the device and the shoe, and wherein the anti-rotation means prevents relative rotation of the at least one body member and the shoe once the axial locking means has engaged.

11. (previously presented) A flow control insert as claimed in claim 3, wherein the apparatus includes a shroud which is disposed around the at least one body member.

12. (previously presented) A flow control insert as claimed in claim 11, wherein the shroud is provided with apertures in the side wall thereof.

13. (cancelled)

14. (previously presented) A flow control insert as claimed in claim 1, wherein the spiral portions of the passage have constant dimensions.

15. (previously presented) A flow control insert as claimed in claim 1, wherein the boundaries of the passage are smooth and free of obstructions.

16. (previously presented) A flow control insert as claimed in claim 1, wherein deceleration of the fluid is caused by friction between the fluid and the spiral portions of the passage.

17. (cancelled)

18. (cancelled)

19. (previously presented) A flow control insert as claimed in claim 1, wherein the flow control insert has a central column and wherein the spiral portions of the passage spiral around the central column.

20. (cancelled)

21. (previously presented) A flow control insert as claimed in claim 1, wherein the downhole string has a longitudinal axis, and wherein the angle of the spiral portions of the passage is more than 60 degrees relative to the longitudinal axis of the downhole string.

22. (previously presented) A flow control insert as claimed in claim 1, wherein the downhole string has a longitudinal axis, and wherein the angle of the spiral portions of the passage is between 70 degrees and 80 degrees relative to the longitudinal axis of the downhole string.

23. (cancelled)

24. (cancelled)

25. (previously presented) A flow control insert as claimed in claim 1, wherein the flow control insert is adapted to induce turbulence into the fluid.

26. (cancelled)

27. (previously presented) A flow control insert as claimed in claim 1, wherein the flow control insert is adapted to induce turbulence into the fluid in the cavity between the at least two oppositely-directed spiral passage portions.

28. (previously presented) A flow control insert as claimed in claim 1, wherein the downhole string is selected from the group consisting of drillpipe, tubing, coiled tubing, filtration screen, casing and liner string.

29. (previously presented) A control assembly, including:

control apparatus for controlling the flow of fluid into a borehole through a downhole string, wherein the control apparatus is adapted to decelerate the flow of fluid through the downhole string, the control apparatus having a passage therethrough, the passage including at least one spiral portion which spirals in a first spiral direction and at least one further portion which spirals in a second spiral direction opposite to the first spiral direction and wherein a cavity is provided between the two spiral portions;

a downhole string in which the control apparatus is located, the downhole string having a shoe, wherein the control apparatus is formed separately from the downhole string and is located in the downhole string above the shoe;

a valve located in the downhole string above the control apparatus;

wherein the cross-sectional area of the passage in the control apparatus is greater than the cross-sectional area of the valve.

30. (original) An assembly as claimed in claim 29, wherein the valve is located in a float collar.

31. (currently amended) A method of controlling the passage of fluid through a downhole string located in a borehole, the downhole string including a shoe, the downhole string having a longitudinal axis;

wherein the method includes ~~the steps of~~:

inserting a separately-formed flow control insert within the downhole string, above the shoe, wherein the flow control insert comprises a passage which includes at least one spiral portion which directs fluid passing through it in a first spiral direction and at least one further portion which directs fluid passing through it in a second spiral direction opposite to the first spiral direction and wherein fluid passing between the first and second spiral portions is directed through a cavity provided between the two spiral portions; and

decelerating the fluid through the flow control insert;

wherein the flow control insert causes the fluid to change direction from an axial direction to [a] the first spiral direction as it flows into the first spiral portion, and from the first spiral direction to [a] the second spiral direction as the fluid flows through the cavity and into the second spiral portion, ~~and wherein the second spiral direction is opposite to the first spiral direction.~~

32. (previously presented) A method as claimed in claim 31, including the step of causing the fluid to deviate from the downhole string into a passage which is inclined relative to the longitudinal axis of the downhole string.

33. (previously presented) A method as claimed in claim 32, wherein the fluid is decelerated by friction between the fluid and the boundaries of the inclined passage.

34. (previously presented) A method as claimed in claim 32, wherein the inclined passage has constant dimensions and the boundaries of the passage are free of obstructions so that the fluid moves along the passage without hindrance.

35. (cancelled)

36. (previously presented) A method as claimed in claim 31, wherein the fluid is caused to travel in a tight spiral so that it travels through a large distance in a small axial space.

37. (cancelled).

38. (previously presented) A method as claimed in claim 32, wherein a float collar having a valve is provided in the downhole string above the inclined passage, and wherein the passage has a greater cross-sectional area than the cross-sectional area of the valve so that the fluid flows without restriction into the passage.

39. (previously presented) A method as claimed in claim 31, including the step of inducing turbulence into the fluid.

40. (previously presented) A method as claimed in claim 39, wherein turbulence is induced by causing the fluid to change direction from the first spiral direction to the second spiral direction.

41. (previously presented) A method as claimed in claim 32, wherein the inclined passage is defined by at least one body member having formations thereon and wherein a shroud having apertures in its surface is provided around the body member, the method including the step of passing cement through the passage, so that some of the cement exits the passage via the apertures to cement the body member to the downhole string.

42. (cancelled).

43. (previously presented) A flow control assembly comprising:

a downhole string, including a shoe at a lower end thereof; and

a flow control insert located within the downhole string above the shoe, the flow control insert being adapted to decelerate the flow of fluid through the downhole string, wherein the flow control insert is formed separately from the downhole string and has a passage therethrough which includes at least one spiral portion which spirals in a first spiral direction and at least one further spiral portion which spirals in a second spiral direction, wherein the second spiral direction is opposite to the first spiral direction, and wherein a cavity is provided between the two spiral portions.

44. (cancelled)